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ZODIACAL LIGHT

In the southern latitudes, and rarely in the middle latitudes (during February-March in the evening in the west after sunset, and September-October in the morning in the east before sunrise), one can see a feebly-luminous inclined wedge, whose axis lies along the Elliptic. This wedge extends to a distance of 60 to 80 degrees on both sides of the sun and at the horizon it is 20 to 30 degrees wide.

Sometimes, one can see that the eastern and western parts of the zodiacal light, extending still further, seem to join, as it were, to form at a point in the sky opposite the sun a bright spot oval in form and 10 to 20 degrees in length, the so-called "Gegenschein." This spot also extends somewhat along the Elliptic. The Gegenschein possesses its greatest elevation above the horizon in the winter around midnight.

The zodiacal light sometimes surpasses in brightness the "cloud" of the Milky Way; it does not possess sharp outlines, but gradually blends with background of the sky. It is distributed over virtually the entire sky. On dark, moonless nights, even far from the wedge of zodiacal light itself, 60 percent of the total brightness of the background of the night sky must be due to the weak luminescence of the zodiacal light. Study of its spectrum shows that the zodiacal light consists of fine particles of dust that reflect the sun's light; therefore, finer particles are disposed closer to the sun.

It is possible to think that both the sun and the planets close to it, including the Earth and possible Mars, are immersed in this cloud. Observations of the zodiacal light and also of the Gegenschein on dark moonless nights are possible if the atmosphere is sufficiently transparent.

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